Trans-Lake Washington Project

Highway Performance Findings

June 2001

Trans-Lake Washington Project

Highway Performance What Have We Learned?

4 Lane Alternatives on SR 520

- Person trips will increase by about 38,000 by 2020
  - HOV/transit use will increase over 250% due to heavy congestion
  - GP/commercial trips increase by about 5%
- Vehicle trips will increase by about 14,000 by 2020
  - HOV/transit increases by about 4,000 vehicles
  - GP vehicles increase about 10,000

Trans-Lake Washington Project

Highway Performance What Have We Learned?

4 Lane Alternatives on SR 520 (continued)

- Travel times will increase about 35% by 2020
  - HOV times will continue to slow due to overall congestion/lack of separation
- Periods of heavy congestion will lengthen (peak spreading) fairly significantly
  - Especially true near I-405 and I-5

Trans-Lake Washington Project

Highway Performance What Have We Learned?

6 Lane Alternatives on SR 520

- Person trips increase by about 30,000 over No Action
  - HOV/transit use will increase about 25-30% over No Action
  - GP trips grow slightly through replacing HOV trips in GP lanes
- Vehicle trips will increase by about 10,000 over No Action
  - HOV/transit use increases over 145%
  - GP vehicles trips show fractional increases

Trans-Lake Washington Project

Highway Performance
What Have We Learned?

6 Lane Alternatives on SR 520 (continued)

- Travel times will decrease about;
  - 30% for GP travel over today
  - 40% for GP travel over No Action
  - HOV travel times improve
    - 35% over today
    - 45% over No Action
- Periods of heavy congestion get shorter as a result of HOV separation
  - Can further improve by removal of local access, but at the cost of increased congestion on local arterials

Trans-Lake Washington Project

Highway Performance

6 Lane Alternatives on SR 520 (Additional Key Findings)

- The I-405 interchange will need additional capacity on the GP ramps, and HOV direct access may not be feasible in all directions
- HOV lanes are relatively free flowing (due to separation) significantly improving general highway operations
- To maintain good flow, modification or elimination of some local access may be required in some areas (108th, 124th)
  - Other access may need to be maintained (Lake Wa Blvd/Arboretum)

Trans-Lake Washington Project

Highway Performance What Have We Learned?

8 Lane Alternatives on SR 520

- Person trips increase about 80-100,000, (depending on which corridor has HCT)
  - HOV/transit use will increase about 50% over No Action
  - GP use increases about 45-50% over No Action
- Vehicle trips will increase about 60,000 over No Action
  - HOV/transit use will increase about 150%
  - GP use will increase about 45%

Trans-Lake Washington Project

Highway Performance What Have We Learned?

8 Lane Alternatives on SR 520 (continued)

- Travel times will increase about;
  - 50% for GP travel over today; 15% over No Action
- HOV travel times will decrease about;
  - 35% for HOV/transit over today; 45% over No Action
- Periods of heavy congestion improve over No Action, assuming conflicting movements can be eliminated or separated

Trans-Lake Washington Project

Highway Performance

8 Lane Alternatives on SR 520 (Additional Key Findings)

- Added mainline volumes are resulting in the need to separate or eliminate movements on the east side (108th, 124th, W. Lake Sammamish)
  - and on the west side between Montlake and I-5 westbound, and at Montlake Blvd
- Even with I-5 direct HOV connections, added volumes on I-5 (~ 1,000 vph to NB I-5 during peak hour) are degrading flow on I-5
- Northbound ramp to I-5 needs two lanes (runnout likely carries across Ship Canal Bridge)

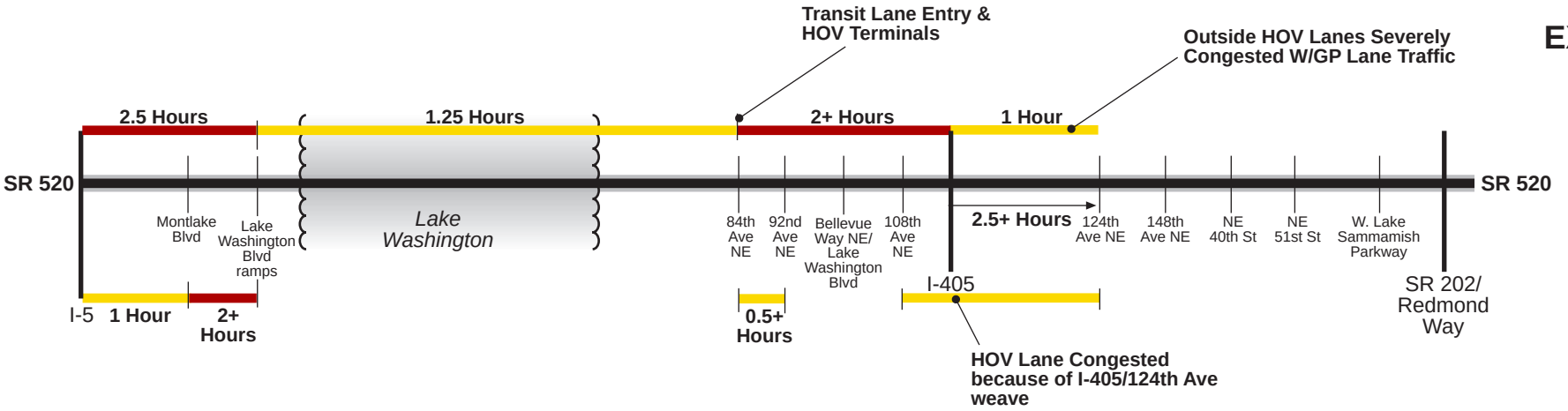
Trans-Lake Washington Project

Highway Performance

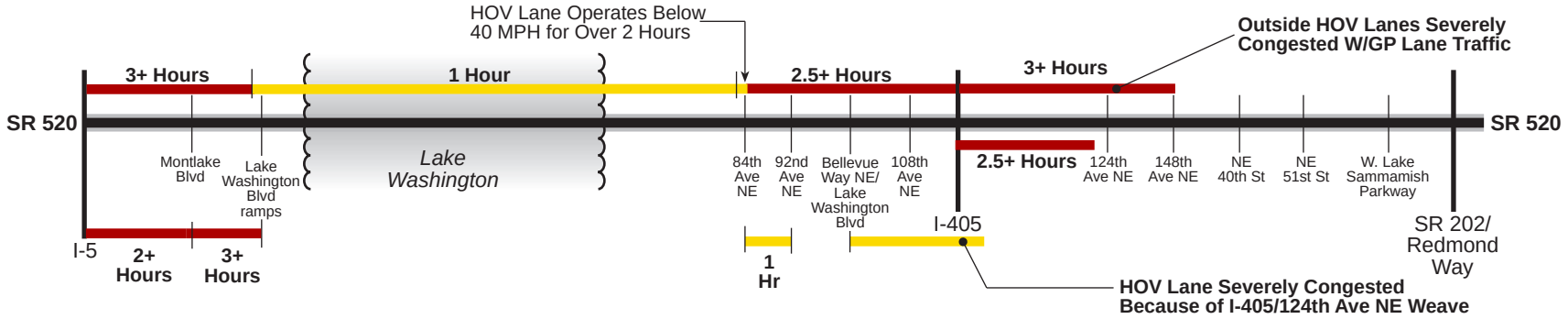
8 Lane Alternatives on SR 520 (Additional Key Findings) - *continued*

- HOV lanes are relatively free flowing
- I-405 interchange needs additional ramp capacity, and HOV direct access in every direction may not be feasible

EXISTING



NO-ACTION



SAFETY & PRESERVATION

- Capacity increase of 150 passenger cars per hour per direction due to shoulder widening/alignment modifications

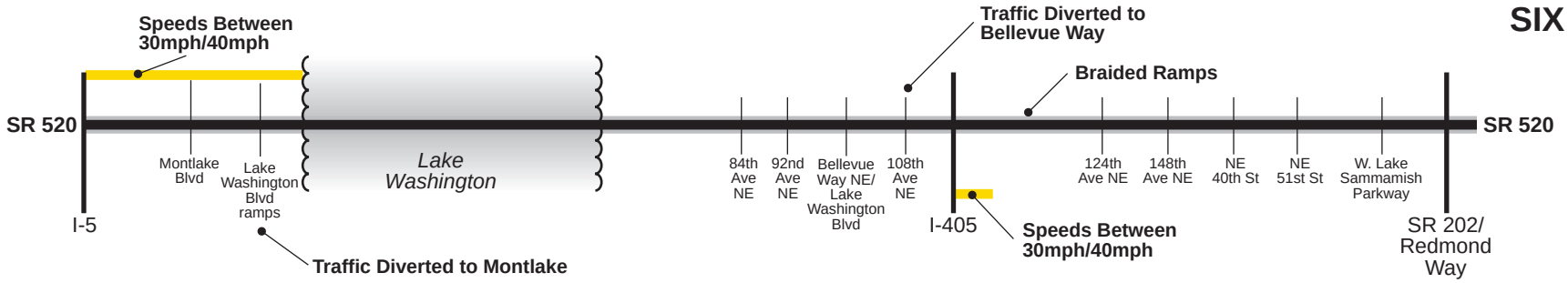
Trans-Lake Washington Project

PMX 234-1631-025/05(050504) (K), F2, 06/11/01

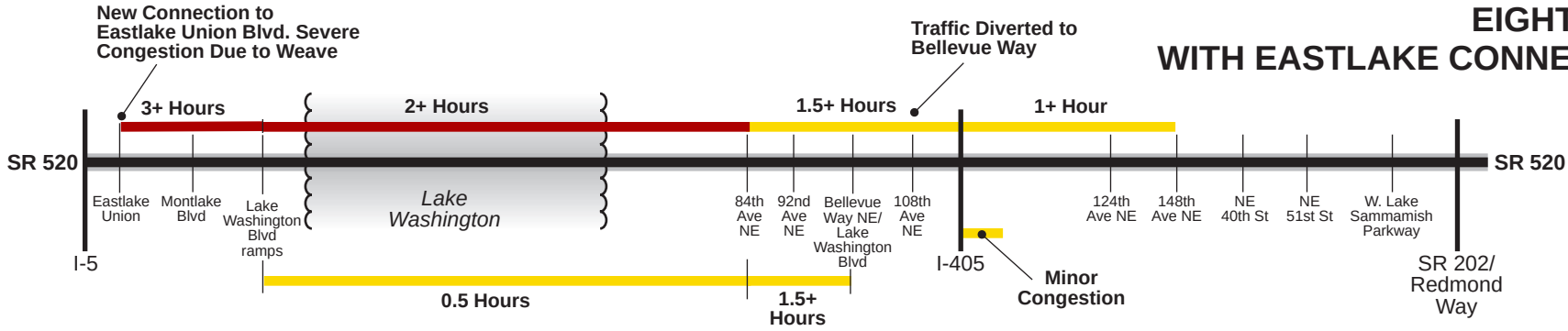
Legend:
Duration of Congestion
\+ Congestion Extends to Mid-day Period
Speeds < 30MPH > 2 Hours
Speeds < 30MPH < 2 Hours

Existing Conditions
SR 520 Corridor
AM Peak Period Congestion
5:30AM to 10:00AM

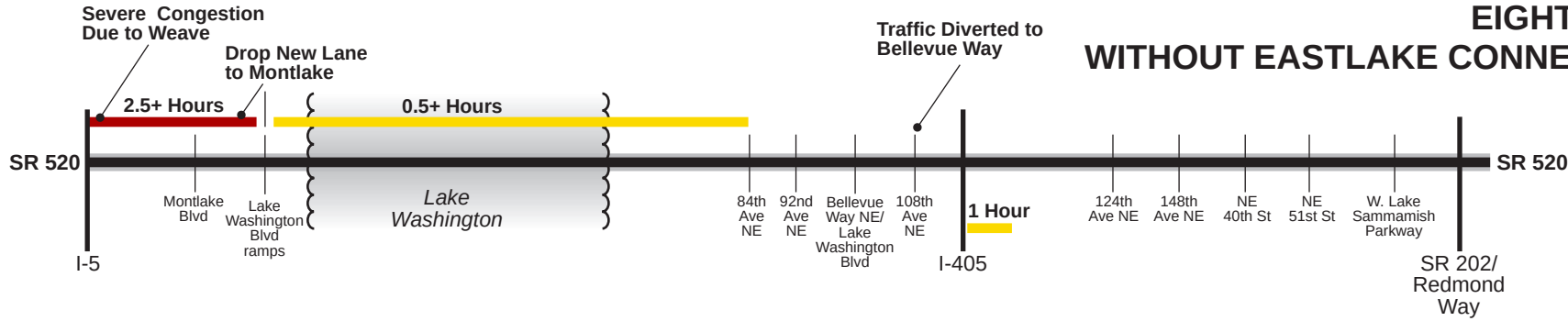
SIX LANE



EIGHT LANE WITH EASTLAKE CONNECTION



EIGHT LANE WITHOUT EASTLAKE CONNECTION



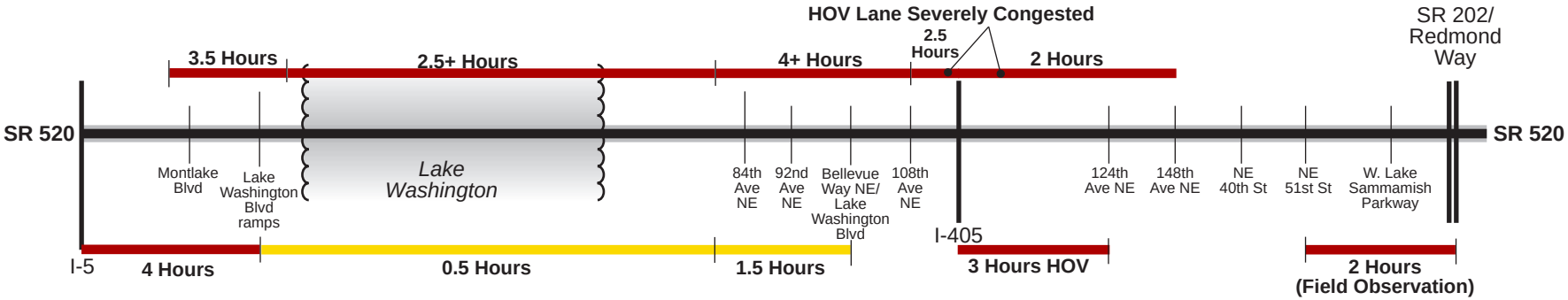
Trans-Lake Washington Project

PMX 234-1631-025/05(050504) (K), F2, 06/11/01

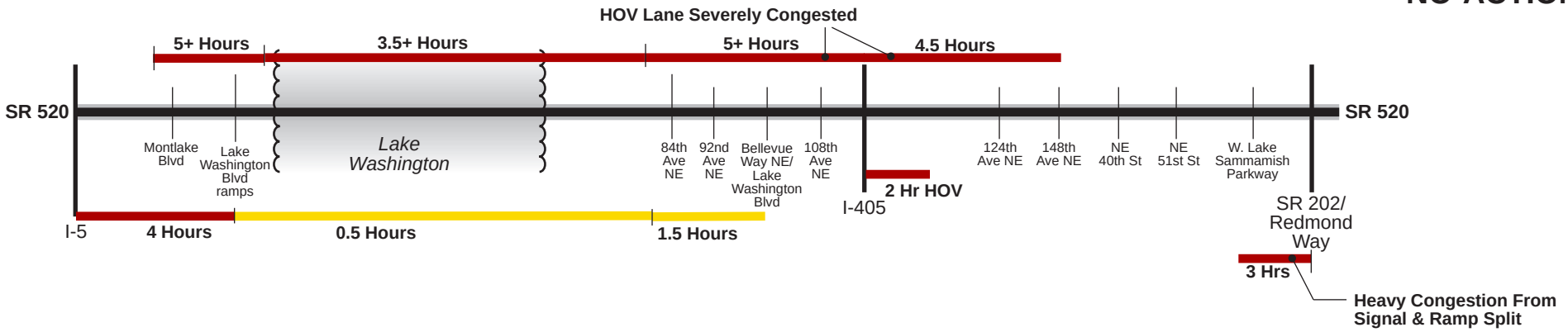
Legend:
Duration of Congestion
\+ Congestion Extends to Mid-day Period
Speeds < 30MPH > 2 Hours
Speeds < 30MPH < 2 Hours

Future Year 2020
SR 520 Corridor
AM Peak Period Congestion
5:30AM to 10:00AM

EXISTING



NO-ACTION



SAFETY & PRESERVATION

- Capacity increase of 150 passenger cars per hour per direction due to shoulder widening/alignment modifications

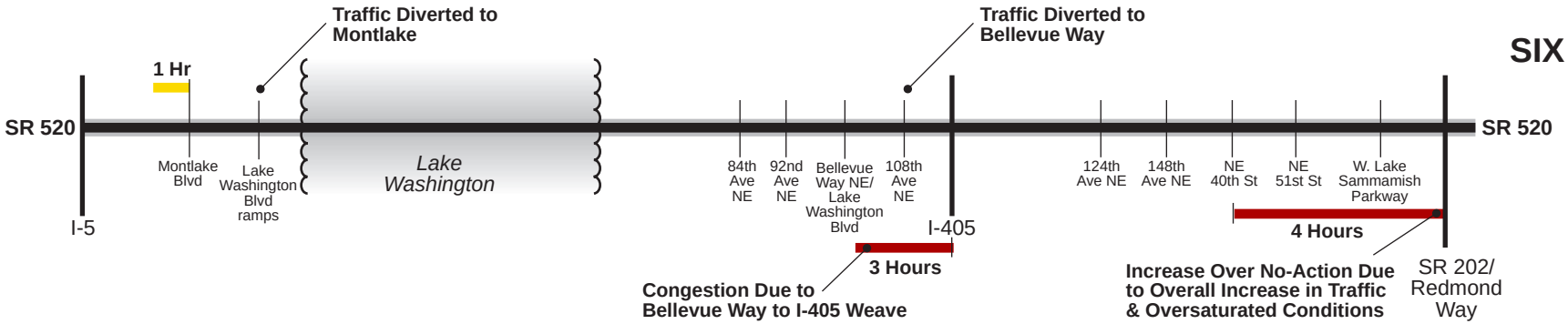
Trans-Lake Washington Project

PMX 234-1631-025/05(050504) (K), F2, 06/11/01

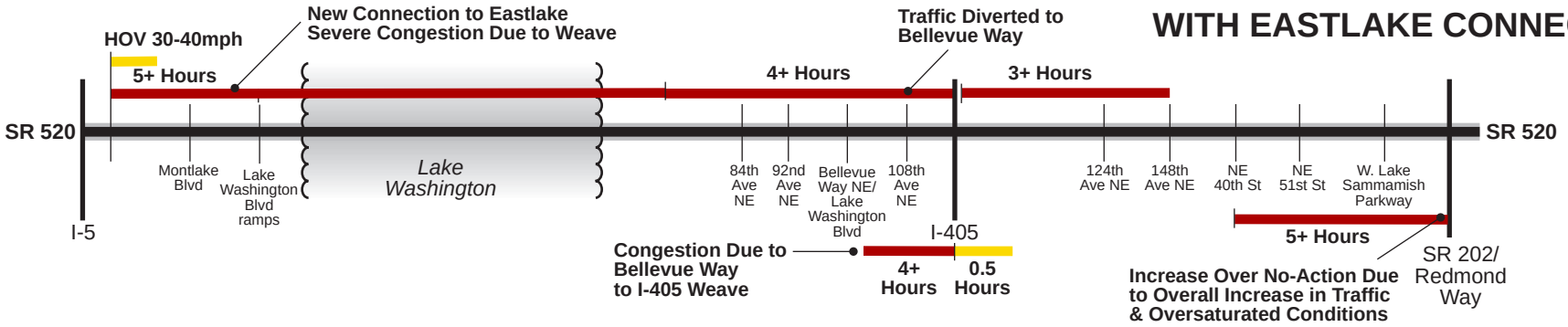
Legend:
Duration of Congestion
\+ Congestion Extends to Mid-day Period
Speeds < 30MPH > 2 Hours
Speeds < 30MPH < 2 Hours

Existing Conditions
SR 520 Corridor
PM Peak Period Congestion
3:000PM to 7:30PM

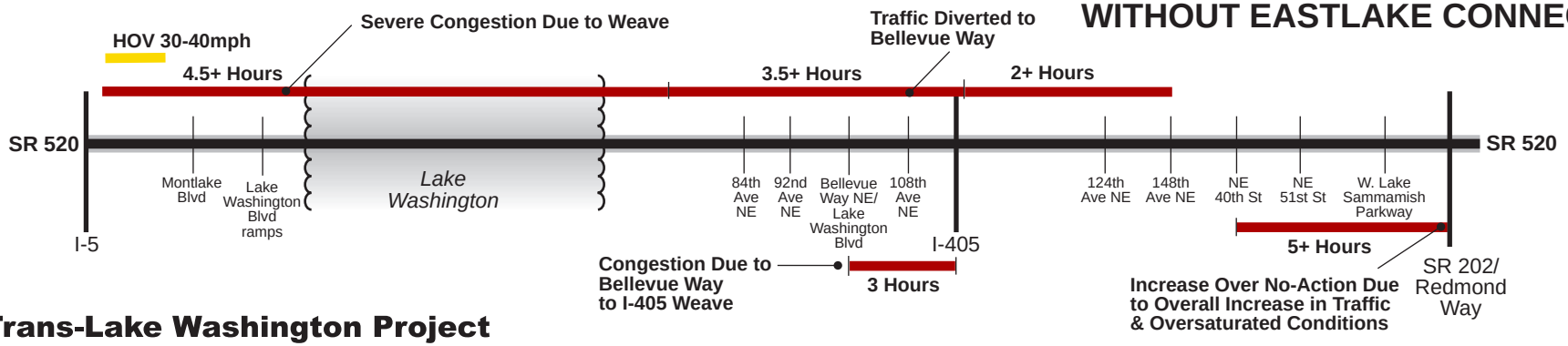
SIX LANE



EIGHT LANE WITH EASTLAKE CONNECTION



EIGHT LANE WITHOUT EASTLAKE CONNECTION

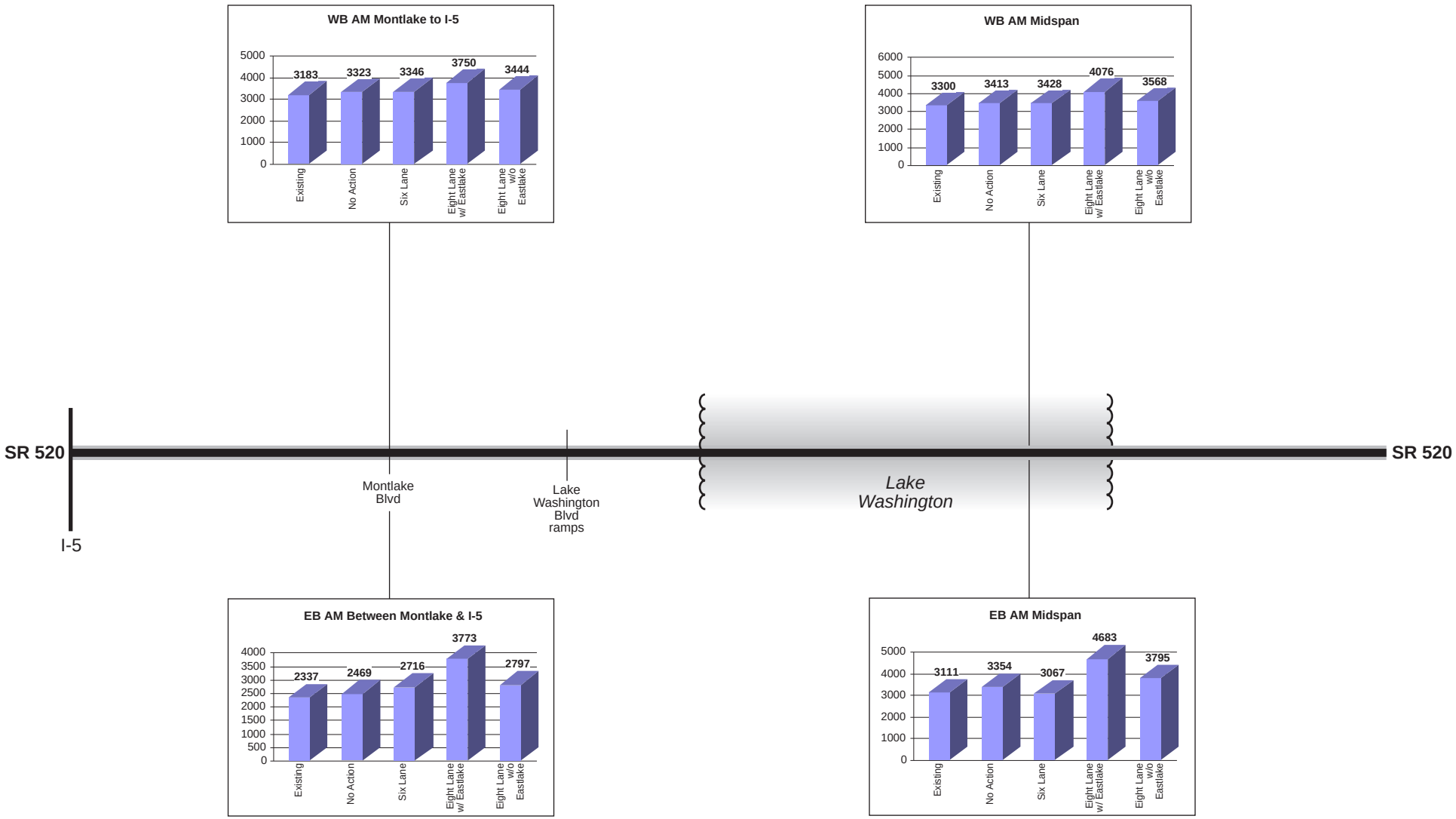


Trans-Lake Washington Project

PMX 234-1631-025/05(050504) (K), F2, 06/11/01

Legend:
Duration of Congestion
\+ Congestion Extends to Mid-day Period
Speeds < 30MPH > 2 Hours
Speeds < 30MPH < 2 Hours

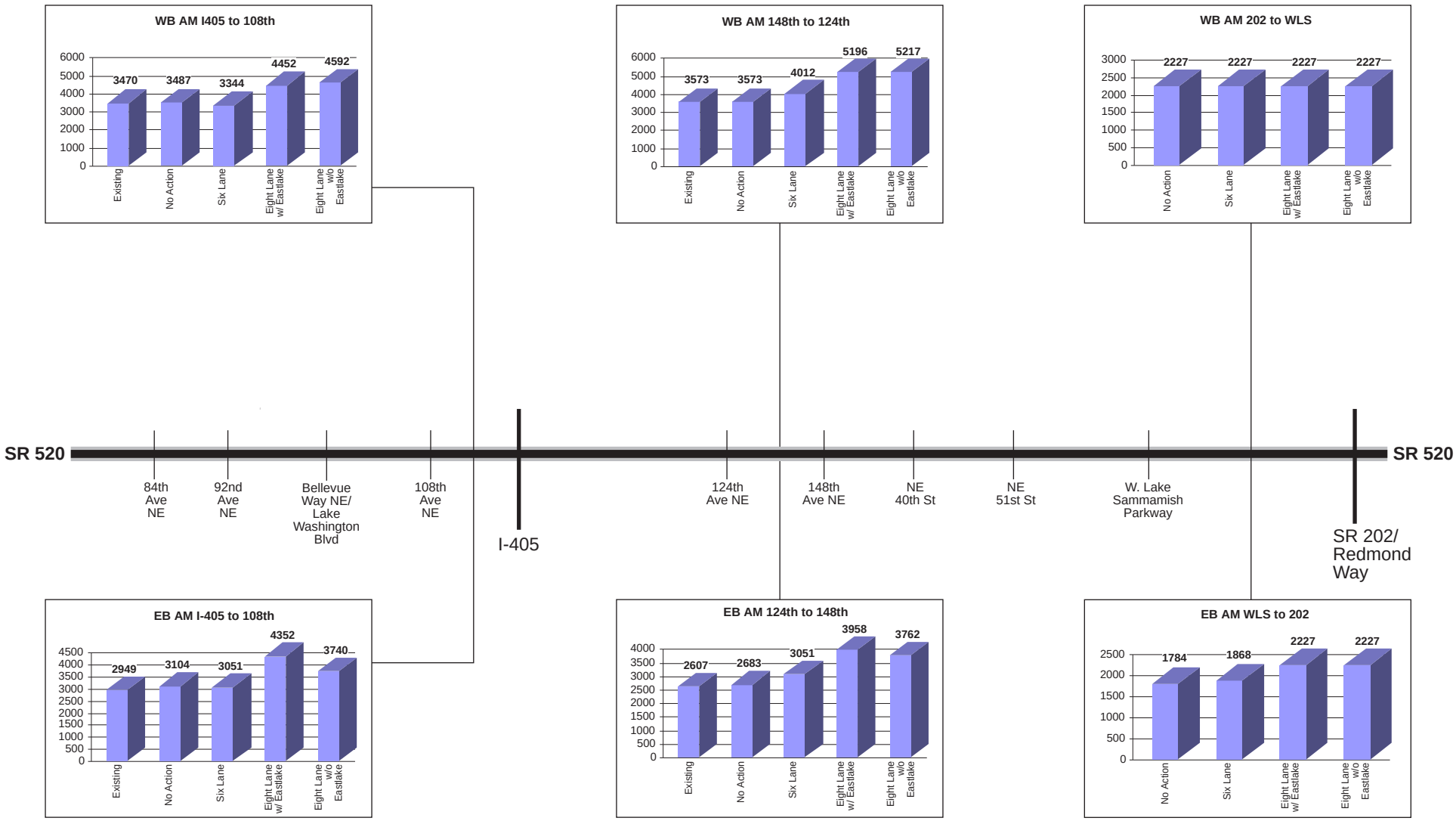
Future Year 2020
SR 520 Corridor
PM Peak Period Congestion
3:00PM to 7:30PM



Trans-Lake Washington Project

PMX 234-1631-025/05(050504) (K), F2, 06/11/01

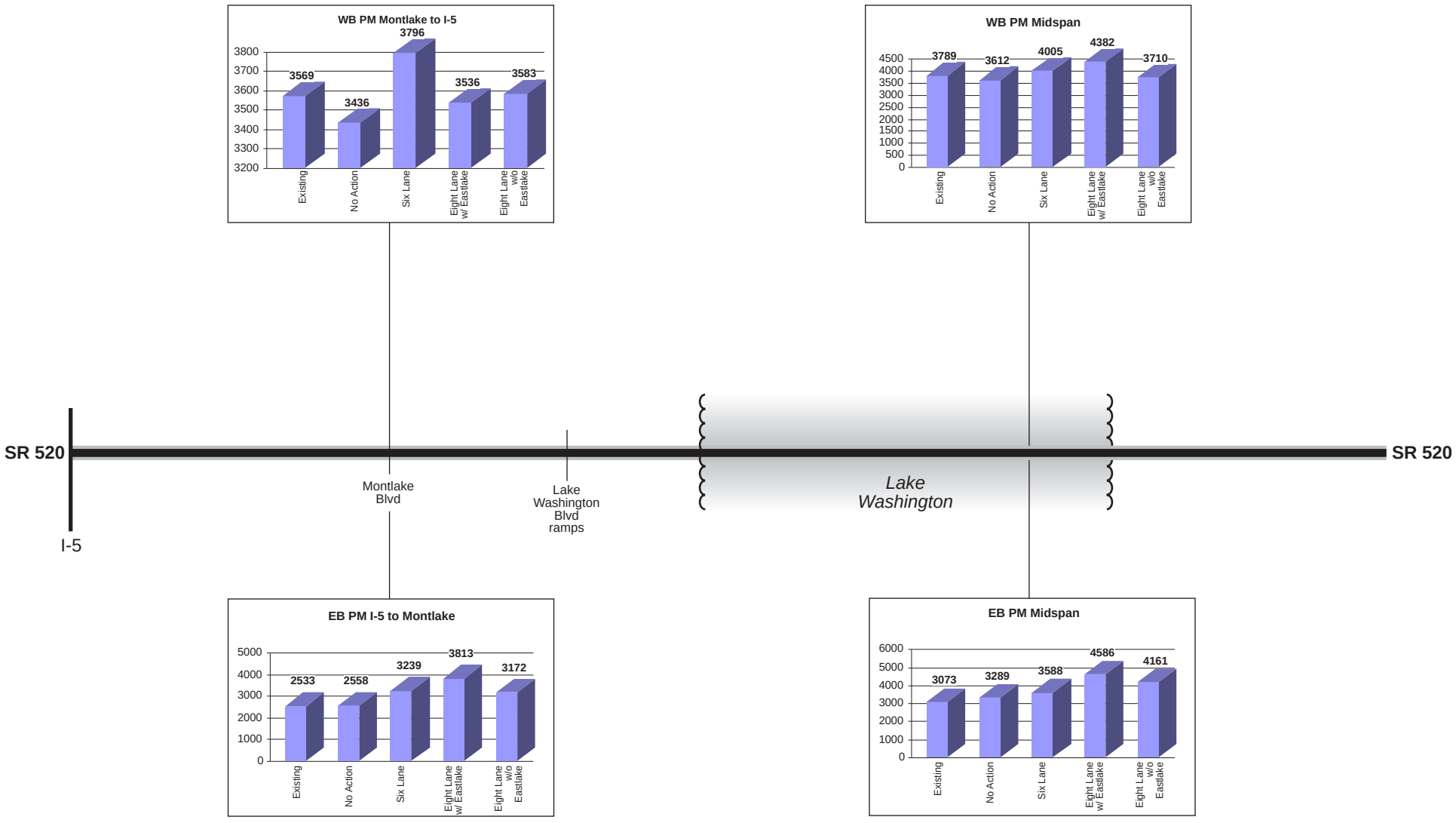
SR 520 Corridor (West)
Average AM Peak Hour Volume Served During Peak 4.5 Hour Period



Trans-Lake Washington Project

PMX 234-1631-025/05(050504) (K), F2, 06/11/01

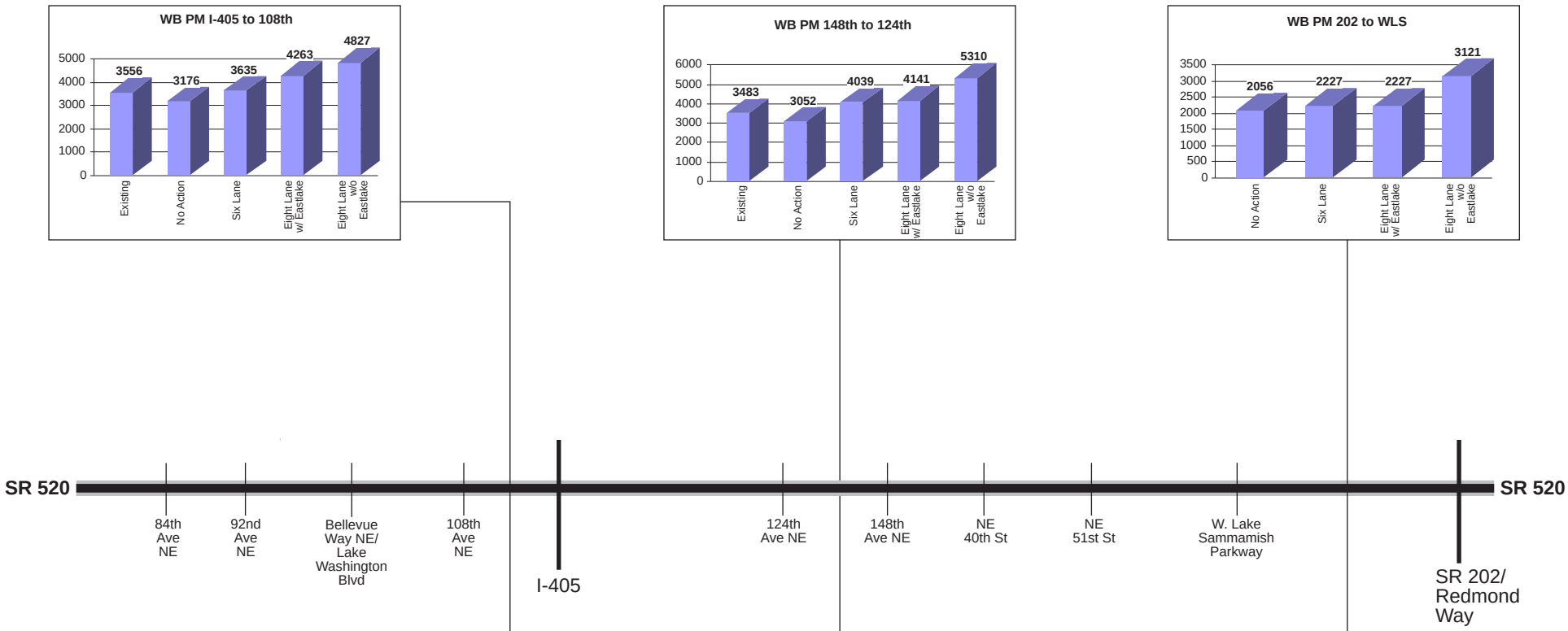
SR 520 Corridor (East)
Average AM Peak Hour Volume Served During Peak 4.5 Hour Period



Trans-Lake Washington Project

PMX 234-1631-025/05(050504) (K), F2, 06/11/01

SR 520 Corridor (West)
Average PM Peak Hour Volume Served
During Peak 4.5 Hour Period



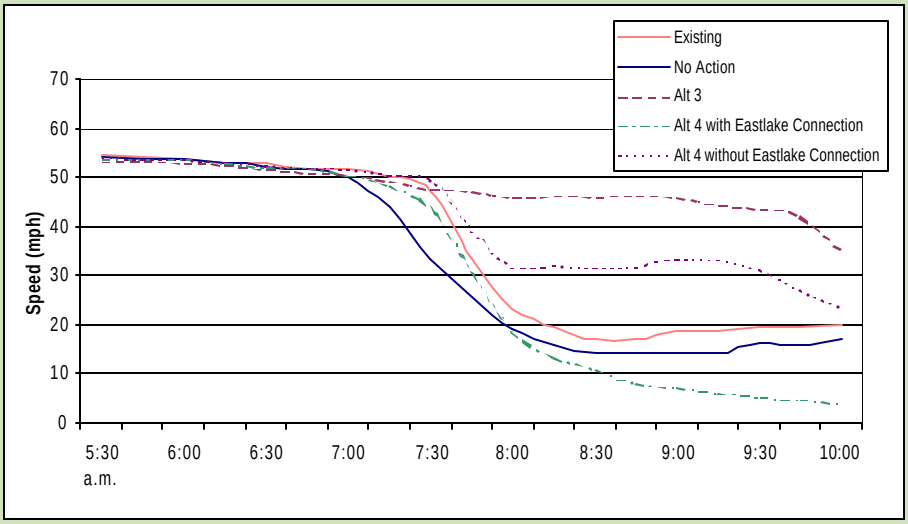
Trans-Lake Washington Project

PMX 234-1631-025/05(050504) (K), F2, 06/11/01

SR 520 Corridor (East)
Average PM Peak Hour Volume Served During Peak 4.5 Hour Period

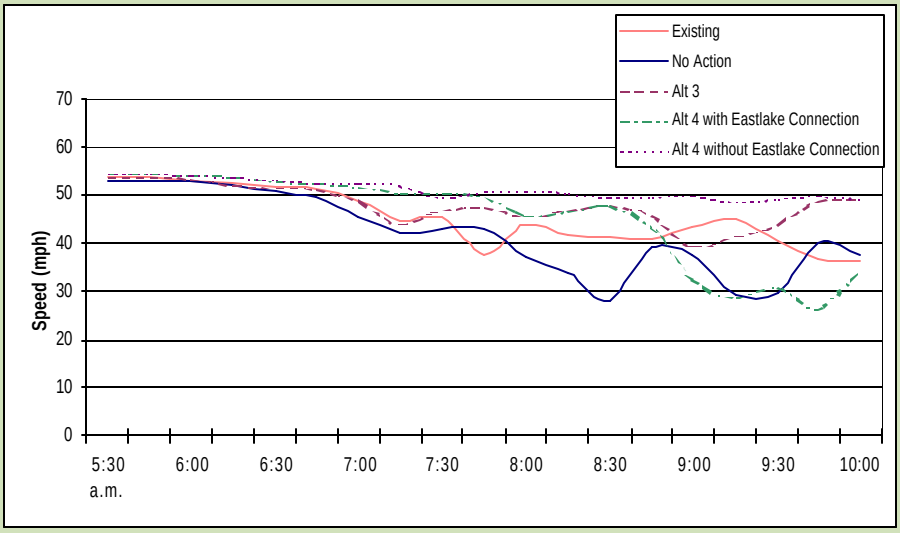
Trans-Lake Washington Project

WB SR 520: AM Peak Between 130th Ave NE and I-5



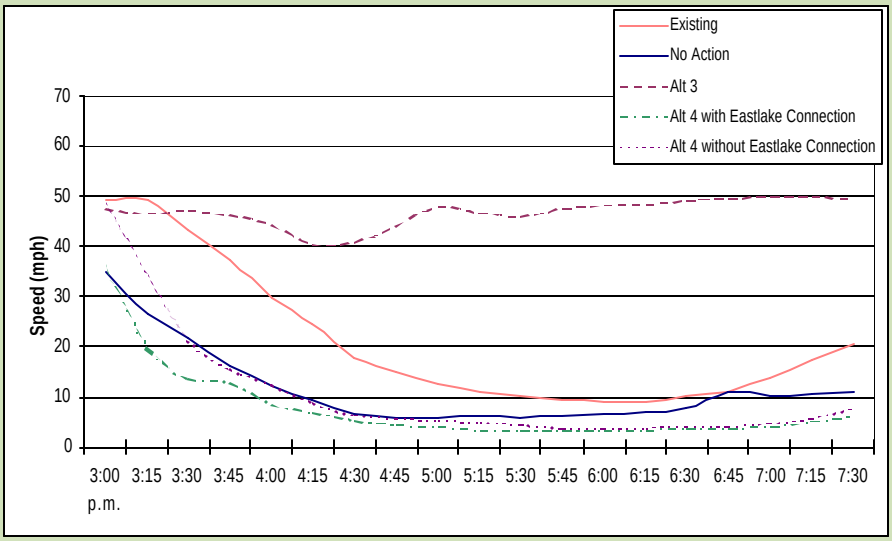
Trans-Lake Washington Project

EB SR 520: AM Peak Between 130th Ave NE and I-5



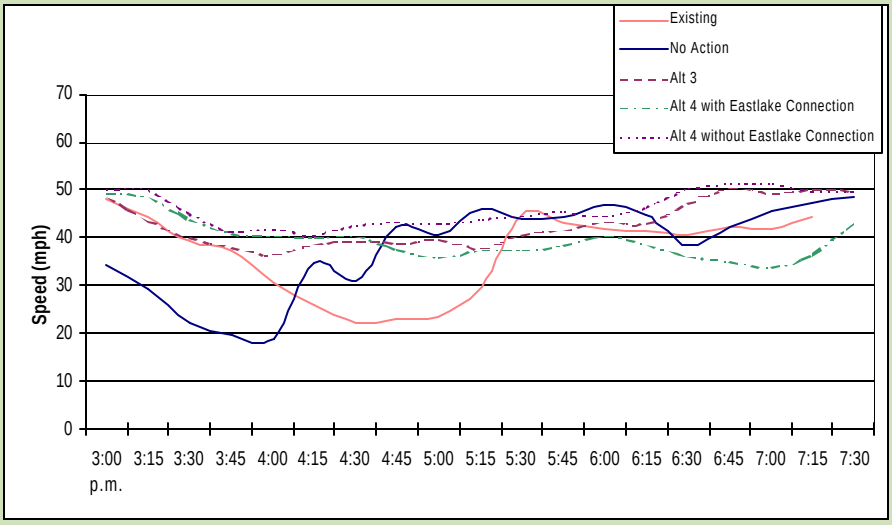
Trans-Lake Washington Project

WB SR 520: PM Peak Between 130th Ave NE and I-5



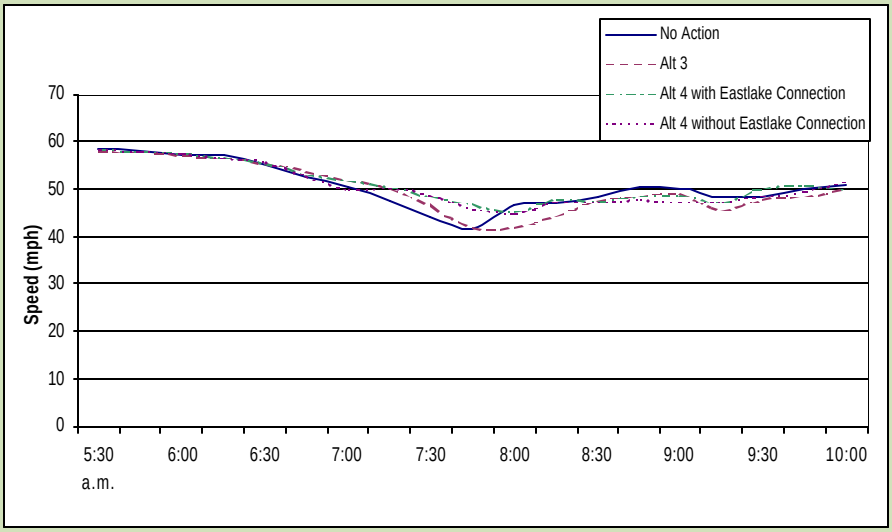
Trans-Lake Washington Project

EB SR 520: PM Peak Between 130th Ave NE and I-5



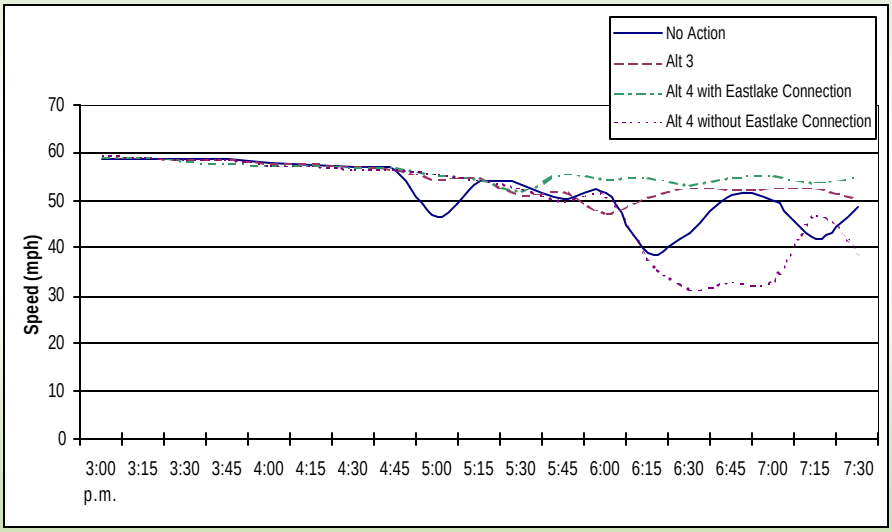
Trans-Lake Washington Project

SB I-5: AM Peak
Between 45th St and Stewart



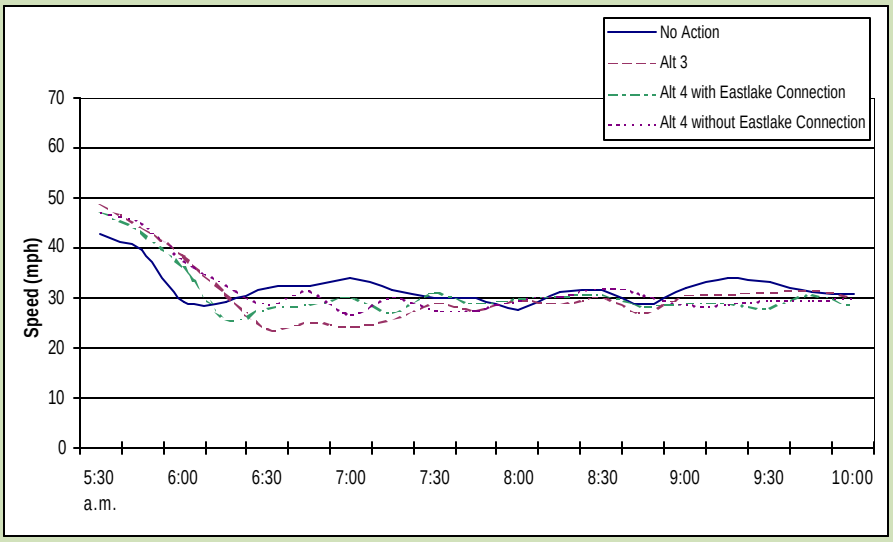
Trans-Lake Washington Project

NB I-5: AM Peak
Between 45th St and Stewart



Trans-Lake Washington Project

SB I-5: PM Peak Between 45th St and Stewart



Trans-Lake Washington Project

NB I-5: PM Peak Between 45th St and Stewart